CLAIMS

What is claimed is:

1. A communication device activation request system, comprising:

a sequence signal generator;

a transmitter configured to receive and transmit a sequence signal; and

a controller in communication with the sequence signal generator and the transmitter, the controller configured to initiate generation of a sequence signal in response to a request for communication from the communication device.

2. The system of Claim 1, wherein the sequence signal generator is configured to generate an M-sequence.

3. The system of Claim 1, wherein the communication device comprises a communication device operating under a digital subscriber line standard.

4. The system of Claim 1, wherein the request for communication occurs after a period of inactivity entered into reduce power consumption of at least one communication device.

5. A wake-up signal detection system for use in a communication device, the detection system comprising:

a receiver configured to receive a sequence signal;

a correlator configured to correlate the received sequence signal;

a comparator to compare the correlated received sequence signal to one or more threshold values;

a controller to determine whether to initiate a warm start process based on the output of the comparator.

6. The detection system of Claim 5, wherein the threshold values comprise predetermined signals or values that represent a signal indicative of a wake-up signal.

7. The detection system of Claim 5, further including a response generator configured to generate a response signal for transmission to a device sending the sequence signal.

8. The detection system of Claim 5, wherein a wake-up signal comprises a signal transmitted from a first communication device to a second communication device to request resumption of communication after a period of inactivity.

9. The detection system of Claim 5, wherein the one or more threshold values comprises signal levels at one or more frequencies.

10. An apparatus for restoring operation of a communication system after a period of inactivity, the communication system comprising at least a first communication device and a second communication device, the system comprising:

a sequence generator at the first communication device configured to generate a sequence signal upon request to initiate communication after a period of inactivity;

a transmitter at the first communication device configured to transmit the sequence signal to the second communication device, the sequence signal intended to initiate operation of the second communication device;

a receiver at the second communication device configured to receive the sequence signal;

a correlator at the second communication device configured to correlate the received sequence signal;

a signal processor at the second communication device configured to process the correlated signal to determine if the received signal is a sequence signal that signals a request to initiate operation.

11. The apparatus of Claim 10, further including an activity detection system configured to provide an indication upon a periods of inactivity between the first communication device and the second communication device, to the communication system.